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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,996	05/25/2001	Atsushi Yamamoto	MTS-3255US	5806

7590

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EXAMINER

NGUYEN, HOANG V

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 10/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/866,996

Applicant(s)

YAMAMOTO ET AL.

Examiner

Hoang V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4,19-21 and 23-40 is/are allowed.
- 6) ☒ Claim(s) 5-10,15-17,22 and 41 is/are rejected.
- 7) ☒ Claim(s) 11-14,18,42 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 8.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

Double Patenting

1. The double patenting rejection is hereby withdrawn as a result of an interview with applicants' representative, Mr. Jankovitz, on 29 August 2002.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation "the dielectric member has a via hole, and the side member consists of the via hole" in claim 18 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 5-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Bogner (US 4,086,598).

Regarding claim 5, Bogner (Figure 3) discloses an antenna comprising a conductive bottom member 19, a conductive side member 10, a conductive member 24 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is

connected to a signal line 31 for transmission and/or reception, and the conductive member and the side member is "capacitively" connected to each other.

Regarding claim 6, Bogner (Figure 3) discloses an antenna comprising a conductive bottom member 19, a conductive side member 10, a conductive member 24 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line 31 for transmission and/or reception, and a conductive ceiling member 14 covering all or part of the space.

Regarding claim 7, as applied to claim 6, Bogner (Figure 3) shows that the conductive member 24 and the ceiling member 14 are connected to each other electrically.

Regarding claim 8, as applied to claim 6, Bogner (Figure 3) shows that the ceiling member 14 and the side member 10 are connected to each other electrically.

Regarding claim 10, Bogner (Figure 3 and 7) discloses an antenna comprising a conductive bottom member 19, a conductive side member 10, a conductive member 24 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line 31 for transmission and/or reception, and at least one of the bottom member and the side member have openings.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bogner.

Bogner discloses an antenna comprising a conductive bottom member, a conductive side member, a conductive member arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception. It would have been obvious to devise a method comprising a step of aligning and arranging plural antennas as cited above in a manner to produce a direction for minimizing directivity of each of the antennas on a horizontal plane.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bogner in view of Johnson et al (US 4,821,040).

Bogner discloses the claimed invention except that the ceiling member has a periphery having a curved shaped. Johnson (Figure 3) discloses an antenna comprising a conductive bottom member, a conductive side member, a conductive member arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception, and a ceiling member having a periphery of a curved shape. It would have been obvious to one of ordinary skill in the art to provide the antenna of Bogner with a ceiling member having a curved periphery, as taught by Johnson, doing so would allow the Bogner antenna to radiate in a desired manner.

8. Claims 15-17 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bogner in view of Sanford (US 6,160,522).

Regarding to claims 15 and 41, Bogner discloses the claimed invention except for a dielectric member having a permittivity higher than air provided in the space. Sanford (Figure 1) discloses an antenna comprising a conductive bottom member, a conductive side member, a conductive member arranged in a space surrounded by the bottom member and the side member,

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wherein the conductive member is connected to a signal line for transmission and/or reception, and a dielectric member having a permittivity higher than air provided in the space. It would have obvious to one of ordinary skill in the art to provide the Bogner antenna with a dielectric member having a permittivity higher than air provided in the space, as taught by Sanford, doing so would suppress higher order frequencies thus obtaining a desired antenna performance.

Regarding claim 16, as applied to claim 15, Figure 2 of Sanford shows that the dielectric member is provided at least so as to cover a part of the space which is not covered with the ceiling conductor.

Regarding claim 17, as applied to claim 15, Figure 2 of Sanford shows that the dielectric member fills the entire inside of the space.

Allowable Subject Matter

9. Claims 4, 19-21 and 23-40 are allowed.

10. Claims 11-14, 18, 42 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4 and 40, Bogner fails to further teach, in combination with all the recited limitations, that the conductive member and the bottom member are connected to each other in a place other than the signal line or the feeding point.

Regarding claim 11, neither Bogner nor Johnson further teaches, in combination with all the recited limitations, that the ceiling member has openings.

Regarding claim 12, neither Bogner nor Johnson further teaches, in combination with all the recited limitations, that the openings have means of adjusting their size.

Claims 13 and 14 would have been found allowable for depending on claim 11.

Regarding claim 18, neither Bogner nor Sanford further teaches, in combination with all the recited limitations, that the dielectric member has a via hole and the side member consists of the via hole.

Regarding claims 19 and 42, Bogner fails to further teach, in combination with all the recited limitations, at least one matching element arranged apart by a predetermined distance from the conductive member, wherein the matching element and the bottom member are connected to each other electrically.

Claims 20 and 21 are allowed for depending on claim 19.

Regarding claims 23 and 43, Bogner fails to further teach, in combination with all the recited limitations, a circuit for transmission and/or reception connected to the signal line and arranged in the space.

Claims 24-39 are allowed for depending on claim 23.

Correspondence

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V Nguyen whose telephone number is (703) 306-3444. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (703) 308-4856. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

13. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Hoang V Nguyen
Patent Examiner
October 3, 2002